

1 WHAT IS CLAIMED IS

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1. ~~A method of driving a liquid crystal~~  
display device, said liquid crystal display device  
comprising: a first substrate; a second substrate  
opposing said first substrate with a gap therebetween;  
10 a liquid crystal layer confined in said gap; a thin-  
film transistor formed on said first substrate; a  
conductor pattern formed on said first substrate in  
electrical connection with said thin-film transistor,  
said conductor pattern supplying an alternate-current  
15 driving voltage signal to said thin-film transistor; a  
pixel electrode provided on said first substrate in  
electrical connection to said thin-film transistor; an  
auxiliary electrode formed on said first substrate in  
the vicinity of said conductor pattern so as to form  
20 an auxiliary capacitance with said pixel electrode,  
said auxiliary electrode being disposed so as to  
induce a lateral electric field between said auxiliary  
electrode and said conductor pattern; and an opposing  
electrode formed on said second substrate;  
25 said method comprising the step of:  
applying to said auxiliary electrode a  
common voltage substantially equal to a central  
voltage of said alternate-current driving voltage  
signal.

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2. ~~A method as claimed in claim 1, wherein~~  
35 said common voltage is deviated from said central  
voltage by an amount corresponding to 2/5 or less of  
an ~~amplitude of said alternate-current driving voltage~~

1 ~~signal set so as to provide a maximum gradation level.~~

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3. A method as claimed in claim 1, wherein  
said common voltage is deviated from said central  
voltage by an amount corresponding to  $1/20$  or less of  
an amplitude of said alternate-current driving voltage  
10 signal set so as to provide a maximum gradation level.

15 4. A method as claimed in claim 1, wherein  
said central voltage is substantially zero volt.

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5. A method as claimed in claim 1, wherein  
said central voltage is offset from zero volt.

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6. A method as claimed in claim 1, wherein  
said common voltage is set such that a fluctuation of  
a leakage light, caused by a disclination induced in  
said liquid crystal layer by a lateral electric field,  
30 is 10% or less.

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7. A method as claimed in claim 1, wherein  
said common voltage is set such that a flow of liquid

1 crystal molecules, caused in said liquid crystal layer  
by a disclination induced in said liquid crystal layer  
by a lateral electric field, has a velocity of 80  $\mu\text{m}$   
or less per an interval of 24 hours.

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8. ~~A liquid crystal display device, said~~  
10 liquid crystal display device comprising: a first  
substrate;  
a second substrate opposing said first  
substrate with a gap therebetween;  
a liquid crystal layer confined in said gap;  
15 a thin-film transistor formed on said first  
substrate;  
a conductor pattern formed on said first  
substrate in electrical connection with said thin-film  
transistor;  
20 a driving circuit supplying an alternate-  
current driving voltage signal to said thin-film  
transistor via said conductor pattern;  
a pixel electrode provided on said first  
substrate in electrical connection to said thin-film  
25 transistor;  
an auxiliary electrode formed on said first  
substrate in the vicinity of said conductor pattern so  
as to form an auxiliary capacitance with said pixel  
electrode, said auxiliary electrode being disposed so  
30 as to induce a lateral electric field between said  
auxiliary electrode and said conductor pattern;  
an opposing electrode formed on said second  
substrate; and  
a direct-current source applying, to said  
35 auxiliary electrode, a common voltage substantially  
equal to a central voltage of said alternate-current  
driving voltage signal.

1           9. ~~A liquid crystal display device as~~  
          claimed in claim 8, wherein said direct-current source  
          produces said common voltage such that said common  
          voltage is deviated from said central voltage by an  
5       amount corresponding to  $2/5$  or less of an amplitude of  
          said alternate-current driving voltage signal set so  
          as to provide a maximum gradation level.

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          10. A liquid crystal display device as  
          claimed in claim 8, wherein said direct-current source  
          produces said common voltage such that said common  
15       voltage is deviated from said central voltage by an  
          amount corresponding to  $1/20$  or less of an amplitude  
          of said alternate-current driving voltage signal set  
          so as to provide a maximum gradation level.

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          11. A liquid crystal display device as  
          claimed claim 8, wherein said driving circuit produces  
25       said alternate-current driving voltage signal such  
          that said central voltage is substantially zero volt.

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          12. A liquid crystal display device as  
          claimed claim 8, wherein said driving circuit produces  
          said alternate-current driving voltage signal such  
35       ~~that said central voltage is offset from zero volt.~~

1           13. A liquid crystal display device as  
claimed in claim 8, wherein said direct-current source  
produces said common voltage such that a fluctuation  
of a leakage light, caused by a disclination induced  
5 in said liquid crystal layer by a lateral electric  
field, is 10% or less.

10           14. A liquid crystal display device as  
claimed in claim 8, wherein said direct-current source  
produces said common voltage such that a flow of  
liquid crystal molecules, caused in said liquid  
15 crystal layer by a disclination induced in said liquid  
crystal layer by a lateral electric field, has a  
velocity of 80  $\mu\text{m}$  or less per an interval of 24 hours.

20           15. A liquid crystal display device as  
claimed in claim 8, wherein said liquid crystal layer  
is formed of a low-voltage liquid crystal.

25           16. A liquid crystal display device as  
30 claimed in claim 8, wherein said auxiliary electrode  
extends along an edge of said conductor pattern, said  
liquid crystal display device thereby forming an H-  
type Cs liquid crystal display device.

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